



US005964034A

United States Patent [19]

Sueyoshi et al.

[11] **Patent Number:** **5,964,034**[45] **Date of Patent:** **Oct. 12, 1999**

[54] **ELECTRIC SHAVER HAVING FLOATING TRIMMER BLADES, A MAIN BLADE, AND HAIR RAISING PORTIONS**

[75] Inventors: **Hidekazu Sueyoshi; Toshio Ikuta**, both of Osaka, Japan

[73] Assignee: **Matsushita Electric Works, Ltd.**, Osaka, Japan

[21] Appl. No.: **08/882,576**

[22] Filed: **Jun. 25, 1997**

[30] **Foreign Application Priority Data**

Jun. 25, 1996 [JP] Japan 8-164961
Jul. 25, 1996 [JP] Japan 8-196716

[51] **Int. Cl.⁶** **B26B 19/42; A45D 27/38**

[52] **U.S. Cl.** **30/34.2; 30/43.92**

[58] **Field of Search** 30/34.1, 34.2, 30/43.1, 43.92

[56] **References Cited**

U.S. PATENT DOCUMENTS

2,670,534	3/1954	Haber	30/34.2
2,711,015	6/1955	Scully	30/34.2
2,870,534	1/1959	Angst et al.	30/34.1
3,774,300	11/1973	Konig	30/34.1
3,834,017	9/1974	Tolmie	30/34.2
4,174,568	11/1979	Mixner	30/34.1
4,866,843	9/1989	Kumano	30/34.1
4,896,420	1/1990	Locke	30/34.2
4,922,608	5/1990	Pahl	30/34.1
5,249,361	10/1993	Apprille, Jr. et al.	30/34.2
5,706,582	1/1998	Hosokawa et al.	30/34.2
5,711,076	1/1998	Yin et al.	30/34.2

FOREIGN PATENT DOCUMENTS

43 13 371 A1	10/1993	Germany	B26B 19/04
44 18 644 A1	12/1994	Germany	B26B 19/04
4-231991	8/1992	Japan	B26B 19/10
5-56063	7/1993	Japan	B26B 19/42
7-144074	6/1995	Japan	B26B 19/10
8-141227	6/1996	Japan	
2 199 529	7/1988	United Kingdom	30/34.2

OTHER PUBLICATIONS

German Patent Office Letter dated Oct. 8, 1997—English Language Translation provided.

Primary Examiner—Rinaldi I. Rada

Assistant Examiner—Gyounghyun Bae

Attorney, Agent, or Firm—Sughrue, Mion, Zinn, Macpeak & Seas, PLLC

[57] **ABSTRACT**

An electric shaver includes a main blade 1 having an external blade formed with a large number of blade holes and an internal blade coming in sliding contact with an inner face of the external blade and trimmer blades 2 being disposed in the proximity of the main blade, each with a blade edge directed in a direction away from the main blade so that the trimmer blades 2 and the main blade 1 can be brought into contact with a skin surface at the same time. Hair raising members 8 are projected on a blade cover 24 covering the top faces of blade members of the trimmer blades 2. When the electric shaver is moved along a skin surface, the hair raising members 8 on the blade cover 24 raise hair, thereby enhancing the hair introduction efficiency into the main blade 1.

17 Claims, 17 Drawing Sheets

